

Pivoting Indian Manufacturing Policy Differently

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The vision of the new government with its 'Make in India' campaign is to create a manufacturing hub in the country which would, in turn, help transform the Indian economy. However, at present, there are various barriers, including inadequate infrastructure, utilities, labour laws, uncertainties associated with policies, regulations as well as corruption which make doing business in India challenging. Thus, the manufacturing policy needs to be evaluated in light of the present challenges and available resources to enable firms to compete effectively while working with the advantages of their inherent structures.

Executive Summary

Three major debates in the manufacturing sector, namely *volume vs variety*, *manual vs capital intensive*, and *low tech vs hi-tech production* have been discussed in this paper as these are issues which have, to some extent, created a misalignment between a firm's capabilities and strategies adopted. Further, the paper also outlines a strategy for the manufacturing sector and provides a framework for its implementation.

One of the approaches deals with the establishment of clusters that, unlike the present scenario, consist of interlinked collaborative firms rather than competing firms which each unit playing on their strengths. Skill development should be another critical focus area as the available resources do not possess the necessary skill set. Further, any policy structure should focus on enabling innovation so as to steer those that do possess the required skills, towards manufacturing. Greater emphasis of technology usage should also be promoted throughout the value chain for not only achieving better quality and precision but also utilising available avenues, such as e-commerce for sales. Companies today face competition from global firms as well and thus, policies and strategies should be put in place to create enabling structures to ensure

that local firms can become more competitive.

Introduction

India is one of the fastest growing economies in the world and as per International Monetary Fund (IMF) estimates, the country is expected to grow at 7.5 percent this year.ⁱ In order to achieve this target, the government is rightly focussing on boosting the manufacturing sector through programmes, such as 'Make in India'. The government has also set an ambitious target of raising the contribution of the sector towards the Gross Domestic Product (GDP) to 25 percent by 2025 from the current 16 percent.ⁱⁱ

Indian manufacturing sector has never been considered a strong performer, often changed structure and is diverse with the existence of modern as well as backward firms. Such multiplicity and contrasting environment coupled with issues of achieving self-reliance, creating jobs for unskilled and low-skilled labour, sub-standard infrastructure, inefficient functioning of bureaucracy further complicates the debate on manufacturing in India.

Taking an example of the skewed trade scenario present with China where imports have been on the rise and Chinese products

are cheaper than local products in a low wage economy, such as India highlights the issue existing in the country. Such a situation cannot merely be attributed to government subsidies or low interest rates but points to strengthening of capabilities to create a competitive industrial structure in China. India, on the other hand, is plagued with issues of rising production costs which includes increasing raw material cost, high taxes and duties, inflated costs of land, inefficient infrastructure, high interest rates, bureaucratic delays etc. and rising competition including duty-free imports etc.

Thus, it is important to understand the underlying reasoning behind our current manufacturing structures to assess whether it promotes or hinders competitiveness. There have been various explanations provided for the slow growth of the sector even post liberalisation, including lack of support towards enhancing technological capabilities as well as the process and product domains of firms to manage the rising competition, rigidities in the operating environment and policies such as product reservation for small scale industries.

Some of the critical objectives, as aptly laid down in the 2013 Economic Survey of India, are the extent and quality of employment. However, the key questions and focus should be **'how and what we manufacture and who manufactures what'**. This paper discusses critical issues in the manufacturing sector and how a policy should focus on strengthening the relationship between firms as well as enhance their capabilities. It provides a strategy for the Indian manufacturing sector as well as a framework for transforming manufacturing policy. It has been drafted on the basis of a paper entitled 'Pivoting Indian Manufacturing Policy Differently' by Pankaj Chandra, Professor of Operations & Technology Management, Indian Institute of Management Bangalore.

Critical Issues in Indian Manufacturing

Mass vis-à-vis High Variety Production

While high variety of production (firms capable of handling high levels of product variety and changes thus responding faster to market demands) competes through its flexibility and ability to customise, mass production relies on cost and efficiency, producing large batches of standard products. In India, large volume production has mainly been in sectors with high product replacement, such as garments, locks, low voltage electrical equipment etc. which are traditionally produced by a large number of small enterprises. If a large factory were to produce these products, smaller units would soon become uncompetitive due to advantages of economies of scale which are present in a large set-up. This is a situation which India faces in comparison to Chinese imports. The mass producing firms rely on a well-functioning continuous production system with tight supply chains, no disruptions and fast throughput. Small firms, on the other hand, are best suited for low volume production and greater variety due to their inherent flexibility and low overheads.

There are numerous examples of innovation at small firms, for instance, drug discovery and delivery platforms in the pharmaceutical industry, new material innovation for use in aviation, automobile etc., electronics and software innovations, among others. In such cases, while small firms develop new products and process innovations, large firms scale their production as well as distribute them to markets, which is the usual trend in the growth of manufacturing. However, in India the pattern varies as small firms often do not produce second line of products and rather focus on becoming an ancillary unit for a large firm, producing same products while remaining small. However, they lack the advantage of cost competitiveness with

respect to large firms producing the same product.

Additionally, many large firms operate through procurement of products from small firms to reduce their costs which, in turn, translates to smaller firms reducing costs through further lowering wages, reduced attention to safety, using outdated tools and methods etc. Such units would not be able to compete effectively or match the expected standards, rendering these models unsustainable in the long run. Small and medium-sized enterprises (SMEs) are supposed to be new product and process developers while medium-sized firms provide reasonable variety with a cost-based advantage. These firms, which are medium-sized as per global standards, are highly competitive in terms of their cost as well as quality. Thus, the policy strategy should focus on enhancing the natural advantages of these different firms.

Labour-driven vis-à-vis Capital-intensive Manufacturing

Every economy has labour and capital-intensive industries and their proportion is dependent on the level of skill required for the particular sector and the overall economics. India is likely to remain largely a labour-intensive industry. Greater use of machines enhances the precision levels, reduces certain costs, increases scale and enhances the value of manual labour. Thus, keeping the advantages in mind, human endeavour should focus on the design and manufacture of processes that produce these machines. Manual craft, on the other hand, is meant to add value to the product to achieve higher margins. If the product involves low value add, manual labour would not only operate at a less than optimal scale but also be more susceptible to replacement. Citing an example of a garment factory in Bangladesh or Sri Lanka which has minor automation devises to prevent errors and increase productivity.

Low-tech vis-à-vis Hi-tech Manufacturing

While earlier, technology was not used for low value-added products as this was equated with the consumers' ability to pay, the scenario has changed and it is now dependent on the appropriateness to the productivity requirements. If India wants to enter into the high value-added manufacturing market, there is a need for greater investments in research and development (R&D) by both the government and industry, enhancing science and technology skills and creating centres for advanced manufacturing at universities. Comparing India with other similar economies (The Economic Survey) shows that India's share of medium and hi-tech manufacturing (MHT) is the lowest and while the share of MHT exports of total exports in India is 27 percent, the same in China is almost 60 percent.

Unless the focus in India shifts towards building technological capabilities, it would not be able to take advantage of opportunities and knowledge advancement taking place. The demand for precision and quality is continuously increasing and the nation needs to invest its resources accordingly.

A Strategy for Indian Manufacturing

The companies that focus on high value and variety with low to medium production with precision are the most competitive firms in India with the present structure as their flexibility allows them to effectively manage uncertainties. The challenge is to create an environment that promotes such start-ups and enables them to develop new processes and products. The key issues that such companies face is maximising productivity while improving their products, creating a market and establishing their processes.

One of the solutions is developing incubators with experts in every field that assist such companies with development of new products and processes as well as improving their scale of production. Such a scenario can be further promoted through the establishment of advanced well-designed clusters which consist of interlinked collaborative firms rather than competing firms. Such a network would consist of few large firms that focus on getting orders, assembling, distribution and marketing functions, many ancillary firms and a majority of SMEs which are processing parts as well as developing process technology along with transport, waste-management, banks, educational and research institutions etc.

The present structures do not enable such innovation or collaborative structures to exist; rather they consist of firms competing with each other and as a result costs cannot be reduced due to lack of better design and methods. These soon lose their competitiveness. Clusters could become the mode of growth in India and such a design structure could enable proper controls for quality, facilitate the setting up of a central coordination agency to manage collaboration and can also help lower infrastructure costs while allowing for experimentation with new ideas and practices which could be scaled up in other parts.

Another issue faced today is of human resources. The people available do not possess the requisite skills and those that do have the necessary skills do not consider manufacturing a viable career choice. The latter group, engineers and scientists etc. could be attracted towards manufacturing through focus on innovation. Further, the supply chain consists of the product, technology, people, factory, supply and distribution in marketing. However, Indian companies have largely limited their focus to the factory and supply dynamics while the

value addition in functions, such as product as well as distribution and marketing is much higher and should be focussed upon, even to attract a better talent pool.

Companies today face competition not only from local but also global firms and thus, the strategy as well as policy structure must focus on enabling innovation along with value addition rather than merely focusing on jobs that require low-skills with low wages. Another key factor that can assist SMEs tremendously is the use of IT in their systems, record-keeping, planning, monitoring, e-commerce, analytics etc. Policies that promote use of technology, skill upgradation etc. would go a long way in supporting the sector rather than traditional means of tax-cuts, preferential markets and other similar methods.

A Framework for Transforming Manufacturing Policy

India is likely to have a mixed structure with large, medium and small firms with varying production and technological capabilities. Any policy must aim to build capacities while taking advantage of interdependencies and streamline processes that may be distorting strategy at a company level. The four broad structures that could effect change in order to build a competitive advantage involve making it easier to start and operate a company; ensuring companies can build the necessary infrastructure and trust to establish relationships; enhancing value-added activities at a company level; and building capabilities across the supply chain. For instance, undertaking reforms towards enhancing ease of doing business, such as making establishing and running a factory simpler will help generate employment and attract global firms to invest in India.

Focus on greater use of technology and enhancing technological capabilities can also go a long way in addressing some of the

challenges. SMEs should focus on high value-added activities, however they should also have the support of agencies which would help them to connect with market and sell their products to distant markets. Similar functions are being achieved through e-commerce platforms where small producers can compete with anyone globally if their technological and supply chain structures are in place. Policymakers need to understand the role science and technology is playing in this structure today and focus on enhancing their supporting role to enable faster growth of the sector.

A successful example exists in India in the ICT sector which witnessed tremendous expansion through easy access to bandwidth etc. in the early 2000 which could help provide direction to the manufacturing sector as well. There exist some experiments of incubators such as Bolt, which allow designers to develop, create and sell their products without owning a factory.

Another critical aspect is the regular improvement of skills of workers, use of modern tools, right materials, better measurement systems and floor practices. The sector needs continuous improvement which has proven to be an issue over the past as such measures have not been sustained beyond a few years. This should be a goal of any policy along with focus on increasing productivity.

At present, our policies have two major concerns which deal with their intermittent nature and any interventions employed towards productivity gains are not

coordinated. The resulting gains therefore are sub-optimal. Taking an example of the Ministry of Small & Medium Enterprises which has worked towards improving design capabilities without focus on process improvements has not delivered the desired outcomes. Further, such interventions need to be consistent else they will not help in capacity building and the programme will end with the engagement.

Conclusion

In order to increase the contribution of manufacturing towards India's GDP it is important to make firms competitive and enhance the use of science and technology. The focus needs to be on enhancing the three S's – Science, Skills and Safety.

Working towards creating a mass manufacturing hub in the nation, employing unskilled and semi-skilled workers on low wages is bound to give low returns. However, in order to make the sector more productive it is necessary to build capacities of workers and the government needs to focus extensively on skill building. Advanced manufacturing training institutes along with sector-specific centres are required and while the government can provide necessary resources, the curriculum design and management can be left to private players.

Policies need to focus on improving ease of doing business, creating effective clusters where SMEs are linked to large firms which can provide access to markets. India's strength has been software which is yet to be utilised in supporting manufacturing growth.

ⁱ www.thehindu.com/business/Economy/imf-retains-indias-gdp-forecast-for-2017-at-75/article8124019.ece, last accessed on March 09, 2016

ⁱⁱ www.ibef.org/industry/manufacturing-sector-india.aspx